

CHAPTER 12

DOMESTIC WATER SYSTEMS

12-1. Minimum maintenance activities for domestic water systems

The tables located at the end of this chapter indicate items that must be performed to maintain systems and equipment at a minimum level of operational readiness. The listed action items should be supplemented by manufacturer-recommended maintenance activities and procedures for specific pieces of equipment. Maintenance actions included in this section are for various modes of operation, subsystems, or components. Table 12-1 provides maintenance information for domestic water systems. Table 12-2 provides maintenance information for reservoir water supply. Table 12-3 provides maintenance information for domestic water system instrumentation and electrical systems.

12-2. General maintenance procedures for domestic water systems

See the equipment manufacturer's data for specific instructions regarding maintenance of components associated with domestic water systems.

Table 12-1. Domestic water system

Domestic Water System	
Action	Frequency
Overall Domestic Water System	
Clean and inspect all of the components and piping associated with the domestic water system and report all discrepancies to supervisor. Inspect for:	
Leaking piping or equipment (gaskets, seals, packing, etc).	mo
Corrosion.	mo
Sagging or misaligned piping.	mo
Damaged flexible connectors or expansion joints.	mo
Loose equipment, piping, or electrical connections. (Correct during inspection if possible.)	mo
Incorrect level, temperature, or pressure gauge operation.	mo
Hot or noisy bearings, and equipment with unusual vibration or noise.	mo
Exercise all valves and perform routine maintenance as follows:	mo
Grease stems on OS&Y valves.	mo
Inspection packing gland and tighten as necessary.	mo
Verify correct position and operation.	mo
Check for leaking seals.	mo
Strainers	
Shut down associated equipment or open bypass valve where applicable. Isolate strainer and clean basket.	mo
Water Meter	
Remove meter head from the line and check the mechanism, and condition of the line and straightening vanes. Check for clogged or obstructed line or vanes.	yr
Check for water accumulation inside the meter. Replace seals when required.	yr
Check and clean all meter parts located in the flow stream. Make sure all moving parts spin freely.	yr
Check front bearing for excessive play. Replace when required.	yr
Lubricate register clock with light-weight oil and all other components fitted with grease fittings, with grease. DO NOT OVERLUBRICATE.	yr
Check meter indicator for proper operation. If parts such as gears and bushings are found to be worn out or bound, replace the indicator unit.	yr

Table 12-1. Domestic water system (continued)

Domestic Water System	
Action	Frequency
Pumps	
Inspect equipment and perform routine maintenance, and report all discrepancies to supervisor.	
Check for hot bearings.	week
Check for unusual noise or vibration.	week
Check tightness of fasteners (nuts, machine screws, set screws, shaft collars, etc.) and tighten as required.	mo
Visually inspect drive alignment.	mo
Lubricate bearings:	
Sleeve bearings.	mo
Ball bearings.	3 mos
Roller bearings.	mo
For units with belt drives inspect belts and pulleys.	mo
Measure belt tension and adjust as required.	mo
Check packing and adjust as required.	mo
Inspect internal components, replace as required, and adjust in accordance with manufacturer's recommendations.	yr
Reduced Pressure Backflow Preventer	
Isolate backflow preventer, disassemble, and carefully inspect all diaphragms, seals, and seating surfaces for damage or debris. Rinse all parts with clean water before reassembly.	yr
Test unit after servicing per manufacturer's instructions.	yr
Electric Water Heater	
<p style="text-align: center;">WARNING!</p> <p style="text-align: center;">LOCATE POWER SOURCE BEFORE PROCEEDING WITH BREAKDOWN. OPEN CIRCUIT BREAKER. TAG WITH WHITE WARNING TAG TO PREVENT TAMPERING WITH CONTROLS.</p>	
Drain tank and clean out sediment from bottom of tank.	yr
Remove and clean immersion type elements of electric storage heater.	yr
Cut gasket and reinstall elements.	yr
Remove and reinstall magnesium anode.	yr

Table 12-1. Domestic water system (continued)

Domestic Water System	
<i>Action</i>	<i>Frequency</i>
Fill water heater and inspect for leaks and check overall operation.	yr
Gas Water Heater	
CAUTION!	
LOCATE AND CLOSE GAS SHUTOFF VALVE BEFORE PROCEEDING WITH BREAKDOWN.	
Drain tank and clean out sediment from bottom of tank.	6 mos
Remove and clean gas burner.	6 mos
Inspect gas flue and report discrepancies to supervisor. Inspect for:	
Corrosion.	6 mos
Loose joints.	6 mos
Sagging or misaligned pipe.	6 mos
Fill water heater and inspect for leaks.	6 mos
Light pilot per manufacturer procedure. Observe for proper flame.	6 mos
Steam Water Heater	
CAUTION!	
LOCATE AND CLOSE STEAM SUPPLY SHUTOFF VALVE. ALLOW HEATER TO COOL BEFORE PROCEEDING WITH BREAKDOWN.	
Observe unit for proper operation.	3 mos
Check temperature gauge for proper reading, reset modulating valve as required.	3 mos
Check safety valve on open and closed position for proper operation.	3 mos
Inspect valves for proper operation. Clean and repack valves when necessary.	3 mos
Check all hangers and hanger brackets. Tighten loose parts.	3 mos
Inspect water, steam, and return piping for leaks. Repair as required. Replace leaking nipples and fittings.	3 mos
Clean steam traps and strainers.	6 mos
Check steam tube nest for leaks and repair when necessary.	6 mos
Check water heater and steam line insulation. Replace or repair any missing, loose, or worn insulation.	6 mos
Flush tank under pressure until water clears.	6 mos

Table 12-2. Reservoir water supply

Reservoir Water Supply	
<i>Action</i>	<i>Frequency</i>
Reservoir	
Drain reservoir and inspect for the following:	
Cracks.	yr
Infiltration of ground water due to deterioration of walls and floor.	yr
Scrub down all interior reservoir surfaces.	yr
Repair cracks and deteriorated surfaces.	yr
Flush down reservoir with clean water, exit, and close access covers.	yr
Reservoir Pump and Hydropneumatic Tank	
Check tank, pump, and piping for leaks.	mo
Operate pump and record the following:	mo
Pump on pressure.	mo
Pump off pressure.	mo
Cycle time from pump on to pump off.	mo

Table 12.3 Domestic water system instrumentation and electrical

Domestic Water System Instrumentation & Electrical	
<i>Action</i>	<i>Frequency</i>
Transmitters and Controllers	
Calibrate and adjust in accordance with the manufacturer's recommendations.	mo
Thermometers	
Check for accuracy. Remove thermometers from their wells and check against calibrated thermometer in controlled temperature bath.	yr
Pressure Gauges	
Isolate pressure gauge by closing the proper valves. Remove and check in a fixture against a calibrated gauge. Adjust as required following equipment manufacturer's instructions.	yr
Motors	
Check and clean cooling airflow passages on electric motors as necessary so that nothing obstructs airflow.	6 mos
All Electrical Devices	
Check, clean, and tighten terminals at motors, starters, disconnect switches, etc.	6 mos
Wiring	
Check insulation on conductors in starters, switches, and junction boxes at motors for cracks, cuts, or abrasions. Replace wiring as required and correct cause of damage.	6 mos